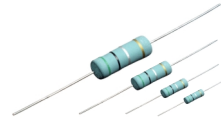


# FUSIBLE FILM RESISTORS, GENERAL PURPOSE 1/8 WATT to 3 WATT

## BW/MBW SERIES



Term. W is  
RoHS  
compliant  
& 260°C  
compatible



BW Series - Axial Lead



MBW Series - SM MELF

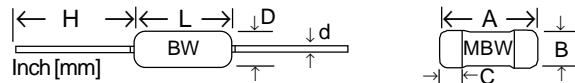
- Industry's widest selection of fusible film resistors -  
1/8W to 3W, .1Ω to 24KΩ, 1% to 5%, leaded & surface mount
- Low cost, quick delivery (available on **SWIFT™** program)
- Flameproof (UL94V0), surface-mount versions available

### OPTIONS

- Modified fusing characteristics (fast blow, slow blow, etc.)
- Increased pulse capability (Option P)
- Dozens of additional options are available...  
Mil-spec screening/burn-in, special marking, non-standard values, custom lead forming, increased power or voltage, etc. Customized components are an RCD specialty!

### Low Cost Circuit Protection!

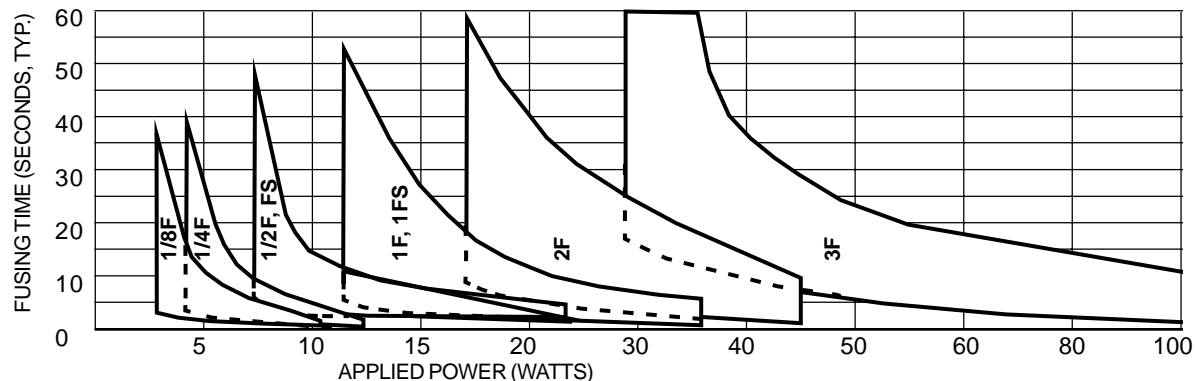
RCD pioneered fusible film resistors in the early 1970's as a low cost approach to circuit protection in case of overload or component failure. The component is designed to act as a conventional resistor under normal operating conditions, but open quickly under fault conditions. Series BW meets the requirements of EIA RS-325 and can be useful in eliminating circuit board damage and fire hazards. Standard fusing characteristics can be altered to customer requirements.



RCD Type	Wattage Rating <sup>1</sup>	Resistance Range <sup>1</sup>	Voltage Rating <sup>1,2</sup>	Dimensions BW Series (Axial Lead)				Dimensions MBW (MELF)		
				L ± .032 [.8]	D ± .024 [.6]	d ±.003 [.07]	H (Min.)	A ± .012[.3]	B (Max.)	C (Min.)
BW1/8F	1/8W	1Ω to 10K	200V	.145 [3.7]	.067 [1.7]	.020 [.5]	1.00 [25]	N/A		
BW1/4F, MBW1/4F	1/4W	0.1Ω to 10K	200V	.250 [6.4]	.090 [2.3]	.022 [.55]	1.02 [26]	.256 [6.5]	.118 [3]	.040 [1]
BW1/2F, MBW1/2F	1/2W	0.1Ω to 24K	250V	.354 [9.0]	.128 [3.3]	.025 [.6]	1.02 [26]	.374 [9.5]	.154 [3.9]	.060 [1.5]
BW1/2FS, MBW1/2FS	1/2W	0.2Ω to 20K	250V	.250 [6.4]	.090 [2.3]	.022 [.55]	1.02 [26]	.256 [6.5]	.118 [3]	.040 [1]
BW1F, MBW1FS	1.0W	0.1Ω to 24K	300V	.375 [9.5]	.135 [3.4]	.026 [.65]	1.02 [26]	.374 [9.5]	.154 [3.9]	.060 [1.5]
BW2F, MBW2F	2.0W	0.1Ω to 24K	300V	.450 [11.4]	.162 [4.1]	.031 [.8]	1.02 [26]	.441 [11.2]	.197 [5]	.080 [2]
BW3F, MBW3F	3.0W	0.1Ω to 24K	350V	.60±.062[15.2±1.6]	.22±.032[5.6±.8]	.031 [.8]	1.37 [35]	.598 [15.2]	.220 [5.6]	.080 [2]

<sup>1</sup> Expanded range available <sup>2</sup> Maximum working voltage is determined by  $E = (PR)^{1/2}$ , E should not exceed value listed.

### FUSING CHARACTERISTICS



### APPLICATION NOTES:

1. Fault level must be suitable to safely open the resistor quickly, especially surface mount MBW models. If insufficient, the resistor may reach elevated temp. For this reason, the fusing overload must be relatively large compared to rated W, 20 to 50x is common for most axial-lead applications, 40 to 100x for most SM circuits. SM fusing times vary due to mounting geometry/materials, so each application needs to be evaluated by user. The fault condition must be at least equal to the minimum W indicated in each of the above curves, and preferably double for SM applications. Fusing may still occur at W levels below the levels graphed above but not consistently (fast-blow models available). Don't exceed volt rating or 200x W rating, whichever is less (increased levels available).
2. For customized models, complete RCD's Fuse Questionnaire or advise the desired fusing wattage or current, min. & max. blow time, continuous wattage, ambient temp., pulse conditions, physical constraints, voltage to be interrupted, frequency, etc.
3. Maintain clearance from any heat-sensitive or flammable materials.
4. Fusing times vary depending on resistance value. Typical fusing times are given above for 1Ω - 3.9K. Low values tend to fuse slower. Consult factory for assistance.
5. Residual resis. is ≥50x initial value after fusing at 20x rated W (30x for BW1/8F & MBW)
6. Verify selection by evaluating under the full range of fault conditions. Place resistors inside a protective case when testing.

### TYPICAL PERFORMANCE

Temperature Coefficient	200ppm/°C
Load Life Stability	5%
Operating Temp. Range	-55 to +165°C
Power Derating	0.71%/°C >25°C
Dielectric Strength	500V (300V BW1/8F)

### P/N DESIGNATION: BW1F □ - 101 J T W

**RCD Type** BW1F □  
**Options** (leave blank if standard)  
**Resis. Code 1%:** 3 signif. figures & multiplier, (R100=1Ω, 1R00=1Ω, 10R0=10Ω, 1000=100Ω, etc.)  
**Resis. Code 2%-10%:** 2 signif. figures & multiplier, (R10=0.1Ω, 1R0=1Ω, 100=10Ω, 101=100Ω, etc.)  
**Tolerance:** J=5% (std.), G=2%, F=1%  
**Packaging:** B=Bulk, T=Tape & Reel  
**Termination:** W = Lead-free, Q = Tin/Lead (leave blank if either acceptable)